vantages over any other American work of a similar character are these: Great attention is given to the habitat of each species, that is, it tells one in what sort of place to look for each. While the keys and text include most of the common mosses of the northeastern states they are much simplified by the omission of many species which never occur in our limits and serve only to confuse the beginner in other keys in which they are included. It is the only American book on mosses, excepting monographs, with a nomenclature conforming to the Rochester Code. It is a very great inconvenience to unlearn names and learn new ones in their places. The inconvenience is best avoided by learning in the beginning the names which are to be used in the literature of the future. With the exception of the genus Hypnum and a few other doubtful cases, the names here used are the names to be adopted in subsequent American works. A complete index, and the synonymy of Lesquereaux and James' Manual make the list easy to use with the existing literature. The price is fifteen cents, postpaid. A copy of the list and a year's subscription to the BRYOLOGIST will be sent for thirty cents.

THE POGONATUMS OR BEARDED MOSSES.

THE generic name of the hair cap mosses comes from two Greek words meaning many hairs, in reference to the hairy calyptra.

The Pogonatums which are very closely related to the hair-cap mosses, take their name from a word meaning a beard. Indeed, when you first discover one of the Pogonatums you will wonder what new hair-cap you have found. Dr. Robert Braithwaite, in his superb British Moss-Flora, has included the Pogonatums in the hair-cap mosses, but to most American students it has seemed better and much more convenient to keep them separate. So nearly alike are the two that we shall need no figure of the Pogonatums. They have the hairy calyptra, the lamellate costa, and the general habit of the hair-caps. They are, however, readily distinguished by the fact that the capsules are round instead of square and there are 32 teeth instead of 64. As in Polytrichum, the species are dioicious, that is, the male and female reproductive organs, antheridia and archegonia, are borne on separate plants.

There are four species of Pogonatum found in New England and the North Central States. The one most likely to be met

with is the slender Pogonatum (*P. tenue—P. brevicaule* of many authors). It grows on bare clayey soil of banks, roadsides, and ditches. The plants do not grow close together but scattered, so that they look like small green dots against the lighter color of the soil. The stems are very short and simple, without branches; the leaves are few, 5–10, radical and very close to the ground, serrate, with few, 8–12, lamellæ. If the ground around the plants be examined, it will be found to be covered with a green felt, the protonema (fig. 1), which is composed of slender, green, alga-like threads that spring from the germinating spore and latter give rise to the mature moss plant. In this species, contrary to the general rule, the protonema lasts throughout the life of the plant. The abundance and persistence of the protonema may account for the smaller number of leaves and the reduced size of the plant, as it doubtless does as much starch-making as many leaves could do. The capsules are cylindric, nearly or quite erect, and are covered with very minute wart-like projections called papillæ. The short-leaved Pogonatum of the New Jersey pine barrens and southward is much like this species, but is easily distinguished by its shorter entire leaves. The urn-like Pogonatum (*P. urnigerum*), is fully as common as the slender Pogonatum in the hilly districts of New England. The stems are much longer, usually branched, naked below and densely leafy above, without persistent protonema. The leaves are serrate, but larger, with very many, 40–50, lamellæ. The capsules are very much like those of the slender Pogonatum. The alpine Pogonatum (*P. alpinum*), is almost sure to be at first mistaken for a hair-cap because of its large size, 2–6 inches in height. It is more likely to be met with than its name indicates, as it is not uncommon in New England on exposed places at an altitude of 1,000 feet or even less. It is readily distinguished by its size, its smooth and inclined or slightly curved capsule. Only those who are privileged to visit our higher mountains need expect to find the hair-like Pogonatum (*P. capillare*). It is most likely to be mistaken for the urn-like Pogonatum, from which it differs in its shorter capsule, nearly simple stem, and in the terminal cell of the lamellæ which is flat-topped; in the urn-like Pogonatum it is sharply rounded. The leaves are also much more curled when dry.

The common hair-cap moss is one of the few plants that have an almost world-wide distribution. It is found in all parts of North America, in Europe, and in Asia.